

Notice of Allowability

Application No.

10/695,839

Examiner

Phuong Phu

Applicant(s)

MATSUSHIMA, MAKOTO

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed on 8/7/07.
2. ☒ The allowed claim(s) is/are 1-11.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application
- ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
- ☐ Examiner's Amendment/Comment
- ☒ Examiner's Statement of Reasons for Allowance
- ☐ Other _____

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 8/7/07. Accordingly, claims 1-11 are currently pending; and claim 12 is canceled.

REASONS FOR ALLOWANCE

2. Claims 1-11 are allowed.
3. References 6639368 and 6828836 are additionally cited because they are pertinent to the claimed invention.

4. The following is an examiner's statement of reasons for allowance:

-Regarding independent claim 1, none of prior art of record teaches or suggests a PWM signal generating circuit for generating a PWM signal, as claimed. Kudo et al (6,658,583), previously cited, teaches the claimed PWM signal generating circuit except he at least fails to teach a second counter circuit wherein said second counter circuit increases or decreases, at a predetermined rate in a predetermined period, the time period between (i) the time when the PWM signal is changed into the active state and (ii) the time when the PWM signal is changed into the inactive state, based on the reasons set forth in REMARKS, pages 8-10, of the Amendment filed on 8/7/07. It would not have been obvious for one skilled in the art to implement Kudo et al in view of other prior art for leading such the implementation to the claimed invention.

-Regarding independent claim 4, none of prior art of record teaches or suggests a PWM signal generating circuit for generating a PWM signal, as claimed. Kudo et al teaches the claimed PWM signal generating circuit except he at least fails to teach a specifying circuit for specifying a first schedule time and a second schedule time, and a second counter circuit wherein

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said second counter circuit starts to decrease an active-to-inactive time period after the active-to-inactive time period reaches an upper limit value and the first schedule time has elapsed, and said second counter circuit increases the active-to-inactive time period after the active-to-inactive time period reaches a lower limit value and the second schedule time has elapsed. It would not have been obvious for one skilled in the art to implement Kudo et al in view of other prior art for leading such the implementation to the claimed invention.

-Regarding independent claim 5, none of prior art of record teaches or suggests a method of generating a PWM signal, as claimed. Kudo teaches the claimed method except he at least fails to teach procedure of changing the PWM signal, which has been changed into the active state, into an inactive state within each cycle, while changing an active-to-inactive time period from a time when the PWM signal is changed into the active state to a time when the PWM signal is changed into the inactive state wherein the time period between (i) the time when the PWM signal is changed into the active state and (ii) the time when the PWM signal is changed into the inactive state, is increased or decreases at a predetermined rate in a predetermined period, based on the reasons set forth in REMARKS, pages 8-10, of the Amendment filed on 8/7/07. It would not have been obvious for one skilled in the art to implement Kudo et al in view of other prior art for leading such the implementation to the claimed invention.

-Regarding independent claim 7, none of prior art of record teaches or suggests a method of generating a PWM signal, as claimed. Kudo teaches the claimed method except he at least fails to teach procedure of decreasing an active-to-inactive time period after the active-to-inactive time period reaches an upper limit value and a first schedule time has elapsed, and increasing the active-to-inactive time period after the active-to-inactive time period reaches a

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lower limit value and a second schedule time has elapsed. It would not have been obvious for one skilled in the art to implement Kudo et al in view of other prior art for leading such the implementation to the claimed invention.

-Regarding independent claim 8, none of prior art of record teaches or suggests a PWM signal generating circuit for generating a PWM signal, as claimed. Kudo et al teaches the claimed PWM signal generating circuit except he at least fails to teach a second counter means wherein said second counter means increases or decreases, at a predetermined rate in a predetermined period, the time period between (i) the time when the PWM signal is changed into the active state and (ii) the time when the PWM signal is changed into the inactive state, based on the reasons set forth in REMARKS, pages 8-10, of the Amendment filed on 8/7/07. It would not have been obvious for one skilled in the art to implement Kudo et al in view of other prior art for leading such the implementation to the claimed invention.

-Regarding independent claim 11, none of prior art of record teaches or suggests a PWM signal generating circuit for generating a PWM signal, as claimed. Kudo et al teaches the claimed PWM signal generating circuit except he at least fails to teach second specifying means for specifying a first schedule time and a second schedule time, and a second counter means wherein said second counter means starts to decrease an active-to-inactive time period after the active-to-inactive time period reaches an upper limit value and the first schedule time has elapsed, and said second counter means increases the active-to-inactive time period after the active-to-inactive time period reaches a lower limit value and the second schedule time has elapsed, based on the reasons set forth in REMARKS, pages 8-10, of the Amendment filed on

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8/7/07. It would not have been obvious for one skilled in the art to implement Kudo et al in view of other prior art for leading such the implementation to the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (8:00 AM - 4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phuong Phu
Primary Examiner
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Phuong Phu
08/22/07

PHUONG PHU
PRIMARY EXAMINER

Phuong Phu